

Agenda

Presented by Terry McCleary

Types of Retaining Walls

Traditional cantilevered retaining walls

- Reinforced concrete walls
- Reinforced concrete masonry walls

Soldier pile and lagging walls

Traditional timber walls

Traditional gravity walls

Reinforced soil retaining walls

Anchored retaining walls (tie-backs, soil nailing, etc.)

Temporary retaining walls

Over-steepened reinforced slopes

Gabion walls Crib walls

Private-sector vs. highway retaining wall systems

Retaining Wall Design

Soil design parameters

Lateral earth pressure

External stability

- Sliding
- Overturning
- Bearing capacity
- Settlement
- Scour

Internal stability Global stability

Special considerations for tiered retaining walls

Backfill Groundwater

Service life Design software

Slope Stabilization

Science of slope stability

Surficial vs. deep-seated slope stability

Long term vs. short term stability

Slope stabilization techniques

- Regrading
- Excavation and replacement
- Slope reinforcement/pinning
- Ground improvement
- Toe retaining walls

Retaining Wall and Slope Stabilization Case Histories

Various commercial, residential projects

Various highway and institutional projects

Retaining Wall Design and Slope Stabilization Techniques

Brookfield, WI - Tuesday, January 15, 2019



Halfmoon Education Inc.
PO Box 278
Altoona, WI 54720-0278

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Learning Objectives

You'll be able to:

Define the characteristics of and applications for different types of retaining walls including traditional cantilevered walls, timber walls and gravity walls.

Identify and quantify the forces that act on retaining walls.

Discuss the factors that impact slope stability and can lead to slope failure.

Evaluate crucial slope stabilization techniques including regrading, reinforcement and ground improvement.



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Identify types of retaining walls, such as cantilevered walls, gravity walls and soldier pile walls, and understand when to use each

Review the forces acting on retaining walls including pressure from retained soil and the impacts of groundwater

Design retaining walls for internal and external stability

Use slope stabilization techniques such as reinforcement and ground improvement

Review retaining wall and slope stabilization case studies

Continuing Education Credits

Architects &

Landscape Architects

7.0 HSW Continuing Ed. Hours

7.0 AIA HSW Learning Units

7.0 LA CES HSW PDHs

Professional Engineers

7.0 PDHs

Floodplain Managers

7.0 ASFPM CECs



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Faculty

Terry McCleary *McCleary Engineering*
McCleary Engineering specializes in geotechnical investigations and recommendations for foundation design, retaining walls, slope stability, embankments, pavement design and rehabilitation, subgrade treatments and other engineering services such as drainage studies. McCleary Engineering is Illinois Department of Transportation (IDOT) prequalified in the general geotechnical services, subsurface explorations, structure geotechnical reports and construction inspection categories.

Mr. McCleary has nearly 19 years of construction and geotechnical engineering experience with IDOT. Six years were spent on the front lines of contract administration in construction as a resident engineer on bridge and roadway projects which included construction layout, material inspection and construction practice inspection. For the last 13 years at IDOT, Mr. McCleary was the District #3 geotechnical engineer, working with hands-on subsurface investigations; analysis, design, and inspection of geotechnical engineering projects; and on-the-spot problem solving. He has served on numerous statewide committees involving abutment design, piling, aggregate subgrade, subgrade stability, pavement under drains and pavement rehabilitation. He served on a nationwide Federal Highway Administration (FHWA) pooled fund study on deep soil mixing technology. In 2009, Mr. McCleary left IDOT to work full time at his company, McCleary Engineering. Mr. McCleary is a licensed professional engineer in the states of Illinois, Indiana, Iowa, Georgia, Oklahoma and Wisconsin. He is a member of the Deep Foundations Institute, the Pile Driving Contractors Association and the Illinois Association of Highway Engineers.

Here’s what past attendees had to say about the program and presenter Terry McCleary:

“Terry is a good presenter. Great content and photos.” — *Landscape Architect*

“Extremely smart, engaging.” — *Project Manager (Construction)*

“Really enjoyed the seminar. Mr. McCleary is a very impressive authority on this subject.” — *Structural Engineer*

Seminar Information

Sheraton Milwaukee Brookfield Hotel
375 South Moorland Road
Brookfield, WI 53005
(262) 364-1100

Tuition
\$279 for individual registration
\$259 for three or more registrations.

Included with your registration:
Complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

Continuing Education Credit Information

This seminar is open to the public and offers 7.0 PDHs to professional engineers and 7.0 HSW continuing education hours to architects and landscape architects in most states, including Wisconsin. Educators and courses are not subject to preapproval in Wisconsin.

HalfMoon Education is deemed an approved continuing education sponsor for architects and landscape architects in New York. HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey, New York (NYSED No. 35), North Carolina, and North Dakota.

This seminar is approved by the American Institute of Architects for 7.0 HSW Learning Units (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 7.0 HSW PDHs. Only full attendance can be reported to the AIA/CES and LA/CES.

The Association of State Floodplain Managers has approved this course for 7.0 CECs.

Attendance will be monitored and attendance certificates will be available after the seminar for most individuals who complete the entire program. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Additional Learning

Webinar Series

- Residential Energy Code**
- **Introduction to the Residential Energy Code and Mandatory Requirements**
Thurs., Dec. 6, 2018, 11:00 AM - 12:30 PM CST
 - **IECC Residential Building Envelope Requirements**
Thurs., Dec. 6, 2018, 1:00 - 2:30 PM CST
 - **IECC Residential HVAC Requirements**
Fri., Dec. 7, 2018, 11:00 AM - 12:30 PM CST
 - **International Energy Conservation Permit Pathways**
Fri., Dec. 7, 2018, 1:00 - 2:30 PM CST

- Deep Foundations**
- **Deep Foundation Site Evaluation**
Weds., Dec. 12, 2018, 11:00 AM - 12:00 PM CST
 - **Overview of Deep Foundations**
Weds., Dec.12, 2018, 12:30 - 2:00 PM CST
 - **Deep Foundation Pile Design**
Thurs., Dec. 13, 2018, 11:00 AM - 12:30 PM CST
 - **Deep Foundation Installation and Testing**
Thurs., Dec. 13, 2018, 1:00 - 2:00 PM CST

- Stormwater Management Systems**
- **Stormwater Infrastructure Practices**
Weds., Dec. 19, 2018, 11:00 AM - 1:00 PM CST
 - **Infiltration Management Techniques**
Thurs., Dec. 20, 2018, 11:00 AM - 1:00 PM CST

- NFPA 70E Series**
- **NFPA 70E, Part I**
Weds., Dec. 26, 2018, 11:00 AM - 3:30 PM CST
 - **NFPA 70E, Part II**
Thurs., Dec. 27, 2018, 11:00 AM - 3:30 PM CST

- Seismic Design and Construction**
- **Seismology and Building Codes**
Thurs., Dec. 27, 2018, 11:00 AM - 3:30 PM CST
 - **Seismic Design of Building Structures**
Fri., Dec. 28, 2018, 11:00 AM - 3:30 PM CST

For more information visit:
www.halfmoonseminars.org/webinars/

Can’t Attend? Order the Manual and the Audio from the Live Seminar as a Self-Study Package!
An audio recording of this seminar is available for \$289. Allow four weeks from the seminar date for delivery. Please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Registration

Retaining Wall Design and Slope Stabilization Techniques

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How to Register		Registrant Information
Online: www.halfmoonseminars.org		Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip _____ Occupation: _____ Email: _____ Phone: _____
Phone: 715-835-5900		Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____
Fax: 715-835-6066	Code:	Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		() I need special accommodations. Please contact me.
Complete the entire form. Attach duplicates if necessary.		

Tuition

() **I will be attending the live seminar.** Single Registrant - **\$279.00**. Three or more registrants from the same company registering at the same time - **\$259.00** each.

() **I am not attending.** Please send me the self study package for **\$289.00**.

☐ Downloadable MP3 Audio/PDF Manual
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